Instruction Manual

Modero S Series Touch Panels

MST-1001/MSD-1001-L - 10.1" Modero S Series Touch Panels
MST-701/MSD-701-L - 7" Modero S Series Touch Panels
MST-431/MSD-431-L - 4.3" Modero S Series Touch Panels

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AMX Limited Warranty and Disclaimer

This Limited Warranty and Disclaimer extends only to products purchased directly from AMX or an AMX Authorized Partner which include AMX Dealers, Distributors, VIP's or other AMX authorized entity.

AMX warrants its products to be free of defects in material and workmanship under normal use for three (3) years from the date of purchase, with the following exceptions:

- Electroluminescent and LCD Control Panels are warranted for three (3) years, except for the display and touch overlay components are warranted for a period of one (1) year.
- Disk drive mechanisms, pan/tilt heads, power supplies, and MX Series products are warranted for a period of one (1) year.
- AMX lighting products are guaranteed to switch on and off any load that is properly connected to our lighting products, as long as the AMX lighting products are under warranty. AMX also guarantees the control of dimmable loads that are properly connected to our lighting products. The dimming performance or quality there of is not guaranteed, impart due to the random combinations of dimmers, lamps and ballasts or transformers.
- AMX software is warranted for a period of ninety (90) days.
- Batteries and incandescent lamps are not covered under the warranty.
- AMX AutoPatch Epica, Modula, Modula Series4, Modula CatPro Series and 8Y-3000 product models will be free of defects in materials and manufacture at the time of sale and will remain in good working order for a period of three (3) years following the date of the original sales invoice from AMX. The three-year warranty period will be extended to the life of the product (Limited Lifetime Warranty) if the warranty card is filled out by the dealer and/or end user and returned to AMX so that AMX receives it within thirty (30) days of the installation of equipment but no later than six (6) months from original AMX sales invoice date. The life of the product extends until five (5) years after AMX ceases manufacturing the product model. The Limited Lifetime Warranty applies to products in their original installation only. If a product is moved to a different installation, the Limited Lifetime Warranty will no longer apply, and the product warranty will instead be the three (3) year Limited Warranty.

All products returned to AMX require a Return Material Authorization (RMA) number. The RMA number is obtained from the AMX RMA Department. The RMA number must be clearly marked on the outside of each box. The RMA is valid for a 30-day period. After the 30-day period the RMA will be cancelled. Any shipments received not consistent with the RMA, or after the RMA is cancelled, will be refused. AMX is not responsible for products returned without a valid RMA number.

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This Limited Warranty does not apply to (a) any AMX product that has been modified, altered or repaired by an unauthorized agent or improperly transported, stored, installed, used, or maintained; (b) damage caused by acts of nature, including flood, erosion, or earthquake; (c) damage caused by a sustained low or high voltage situation or by a low or high voltage disturbance, including brownouts, sags, spikes, or power outages; or (d) damage caused by war, vandalism, theft, depletion, or obsolescence.

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Table of Contents

Modero S Series G4 Touch Panels 1
Overview 1
Features 1
Sleep Button 2
Configuration and Programming 2
Accessing the Settings Menu 2
Using the Settings Pages 2
Bluetooth Support 3
Picture View 3
Starting Picture View 3
Preview Mode and Normal Mode 4
Picture View Send Command (^PIC) 4
Panel Calibration 4
Testing the Panel Calibration 4
Cleaning the Touch Overlay and Case 5
MST/D-1001 - 10.1" S Series Touch Panels 7
MST-1001 (Tabletop) 7
MST-1001 Specifications 7
MSD-1001-L (Wall Mount-Landscape) 9
MSD-1001-L Specifications 9
Touch Panel Aspect Ratio 11
MST/D-701 - 7" S Series Touch Panels 13
MST-701 (Tabletop) 13
MST-701 Specifications 13
MSD-701-L (Landscape Wall Mount) 15
MSD-701-L Specifications 15
Touch Panel Aspect Ratio 17
MST/D-431 - 4.3" S Series Touch Panels 19
MST-431 (Tabletop) 19
MST-431 Specifications 19
MSD-431-L (Wall Mount - Landscape) 21
MSD-431-L Specifications 21
Touch Panel Aspect Ratio 23
Installing Tabletop (MXT) Panels 25
MST-1001/701/431 25
Connector Locations 25
Power via Power Over Ethernet 25

Installing Wall-Mount (MXD) Panels 27
A Note About Wall and Rack Installation 27
Installation Recommendations 28
MSD-1001/701/431-L 28
Removing the Backbox 29
Detaching the MSD-1001-L Backbox 29
Installation 30
Installing the S Series Panel into a Wall 31
MXD-1001-L Dimensions 31
MXD-701-L Dimensions 32
MXD-431-L Dimensions 33
Installing the Backbox 33
Removing The Touch Panel From the Backbox After Wall Installation 38
Upgrading Firmware 39
Overview 39
Downloading Firmware Updates From www.amx.com 39
Upgrading Firmware via USB Flash Drive 39
Load the Firmware on a USB Flash Drive 39
Transfer the Firmware File From the Flash Drive to the Touch Panel 40
Upgrading from Previous Firmware 41
Returning to Factory Default Firmware 41
Upgrading Firmware via NetLinx Studio 41
Transferring the KIT File via NetLinx Studio 42
Troubleshooting 43
Overview 43
Panel Doesn't Respond to Touches 43
Panel Isn't Appearing in the Online Tree Tab 43
Can't Connect to a NetLinx Master 43
Only One Modero S Series Panel Indicated in My System 43

Modero S Series G4 Touch Panels

Overview

The Modero S Series is a beautiful touch panel family sophisticated enough for room control yet priced right for the most cost sensitive installations. The Modero S Series panels include VoIP, brilliant 24-bit color depth, PoE connectivity, USB and streaming video.

Features

- Architectural Design Consistency – Install both Modero S and Modero X touch panels throughout a facility for consistent style on any budget
- Secure Table Mounting Option – Our beautifully styled secure mounting plate attaches to the Modero S tabletop touch panels and secures with under-table tamper resistant bolts making it virtually theft proof; if it's not possible or desirable to mount the touch panel to the table the secure plate can also be used in conjunction with a Kensington Lock, or mount it and use the lock together for extra security
- Powerful Graphics – Powered by G4, the Modero S Series features streaming video and brilliant 24-bit color depth

FIG. 1 Modero S Series Touch Panels

The Modero S-Series G4 Touch Panels covered in this manual include:

Modero S-Series G4 Touch Panels			
Name	**FG#**	**Description**	**Page Ref**
MST-1001	FG2265-05	10.1" Modero S Series Tabletop Touch Panel	page 7
MSD-1001-L	FG2265-01	10.1" Modero S Series Landscape Wall Mount Touch Panel	page 9
MST-701	FG2265-06	7" Modero S Series Tabletop Touch Panel	page 13
MSD-701-L	FG2265-02	7" Modero S Series Landscape Wall Mount Touch Panel	page 15
MST-431	FG2265-07	4.3" Modero S Series Tabletop Touch Panel	page 19
MSD-431-L	FG2265-03	4.3" Modero S Series Landscape Wall Mount Touch Panel	page 21

Sleep Button

S Series touch panels are operated using an integral touchscreen, as well as the *Sleep* button. The Sleep button is located on the top center edge of the panel (see FIG. 2).

FIG. 2 Sleep Button location - Tabletop and Wall Mount

If the device has gone into its Sleep Mode, touching the touchscreen or pressing the Sleep button will reactivate it. Press and hold the Sleep button to access the Settings menu.

Configuration and Programming

S Series touch panels are equipped with a *Settings* menu that provides the ability to configure various features on the panels. To access the *Settings* menu, press and hold the Sleep button, and select **Settings**. This opens the main *Settings* menu

NOTE

Unlike previous G4 touch panels, Modero S Series touch panels do not have separate Setup and Protected Setup pages. All touch panel settings and functionality are now controlled through one Settings menu. The Connection & Networks and Configuration sections are accessible with the correct password.

Accessing the Settings Menu

1. To access the *Settings* menu, press and hold the **Sleep** button on the touch panel for 3 seconds.
   - Alternately, some installation circumstances may require disabling *Settings* page access through the **Sleep** button. In this case, you may access *Settings* pages during a bootup of the panel.
   - As the panel boots up, watch for a series of indicator dots to appear on the splash screen (FIG. 3).
2. To access the *Settings* menu, press the bottom right corner of the touchscreen within the first three seconds of these dots appearing on the screen.

FIG. 3 Indicator dots on the Modero X Series splash screen

Using the Settings Pages

When opened, the *Settings* menu appears in the center of the panel display. Note that many of the pages may be longer than they initially appear. Scroll down to reach all functions on a given page.

Information on the *Settings* menu, panel configuration, and programming is included in the *Modero X Series G4 Programming Guide*, available at **www.amx.com**.

NOTE

Programming Modero S Series touch panels require the use of the latest versions of NetLinx Studio and TPDesign4, both available to download at www.amx.com.

Bluetooth Support

S Series touch panels allow the use of Bluetooth keyboard and mouse combinations, using HID Profile v1.1.

Using a keyboard and mouse with the device requires use of the MXA-BT Bluetooth USB Adapter (**FG5968-19**).

Picture View

By connecting a USB drive via one of the device's USB ports, *Picture View* allows the S Series panel to access JPEG images on that drive and display them on the touchscreen. Individual images may be accessed at any time, or the entire collection may be displayed for predetermined times.

Picture View may be stopped at any time by removing the USB drive, and the panel will return to its default display page.

NOTE

The maximum source resolution for Picture View is 1920x1920 pixels.The maximum displayed resolution is the same as the screen resolution.

Starting Picture View

1. Connect a USB drive to the device. Picture View will automatically recognize all available images on the drive and start displaying them on the touchscreen.
2. When the images begin to display, touch any place on the touchscreen to open the configuration popup menu (FIG. 4).
   - If no selection is made, this menu will remain in place for 15 seconds and then disappear.
   - It may be accessed again by touching anywhere on the touchscreen.

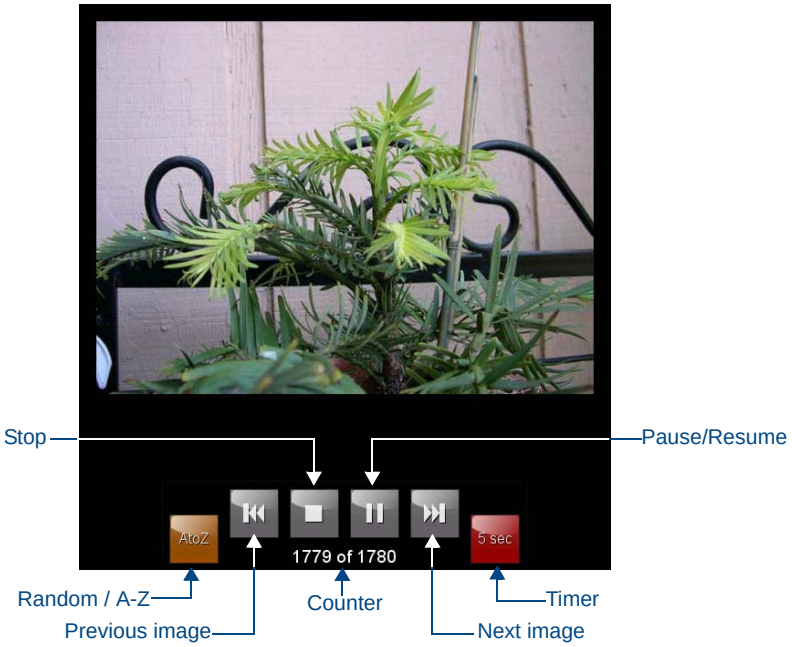


FIG. 4 Picture View Configuration Popup Menu

3. On the leftmost amber button, select between **Rand** (images display at random) and **A-Z** (images display in alphabetical order based on the name of the file).
4. The four gray buttons allow scrolling through saved images and the rate of display:
   - The **Previous Image Saved** button returns the display to the first image uploaded by Page View.
   - The **Stop** button stops Page View and returns to the default panel page.
   - The **Pause/Resume** button allows the display to stop on one particular image. Press it again to resume the display procession.
   - The **Next Image Saved** button returns the display to the last image uploaded by Page View. If the panel has not accessed all of the images available on a USB drive, Page View will display the last one uploaded to date.

5. On the rightmost red button, select the number of seconds a selected image will be displayed in Picture View. This may be selected between 5, 10, 15, 30, and 60 seconds.
6. The counter beneath the buttons displays the number of images currently uploaded by the MST-1001 versus the number detected on the USB drive.

Preview Mode and Normal Mode

Picture View has two modes: *Preview Mode* and *Normal Mode*.

Preview Mode allows the user to configure Picture View. Once a USB drive containing images is inserted into the panel, the images will begin to display. Touching any place on the display will result in the configuration popup to slide from the bottom of the display.

Picture View goes into its Normal Mode when the MST-1001 goes into idle timeout while connected to a USB drive. Normal Mode displays images until the touchscreen is touched, or some other wakeup event is detected. When the device goes back into timeout, Normal Mode will return to displaying images until the USB drive is removed from the device.

Picture View Send Command (^PIC)

The **^PIC** Send Command stops either mode of Picture View, or starts Preview Mode. For more information, please refer to the *Modero S Series Programming Guide*, available at **www.amx.com**.

NOTE

All images must be in JPEG format. PNG and other image formats cannot be viewed through Picture View.

Panel Calibration

It is recommended that the panel is calibrated before its initial use and after completing a firmware download. Panel calibration is performed via the *Calibrate* page. The *Calibrate* page is accessed in one of two ways:

- By holding the Sleep button for ~6 seconds
- Going to Settings > Display > Calibration

1. Press and hold the Sleep button for **6 seconds** (passing-over the Setup page) to access the *Calibrate* page (FIG. 5):

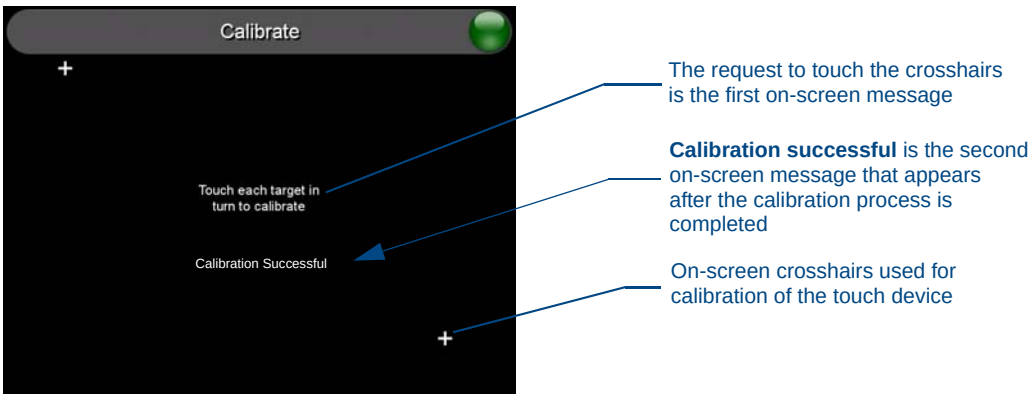

Calibrate
Touch each target in turn to calibrate
Calibration Successful
The request to touch the crosshairs is the first on-screen message
Calibration successful is the second on-screen message that appears after the calibration process is completed
On-screen crosshairs used for calibration of the touch device

FIG. 5 Touch Panel Calibration Screens

2. Press the crosshairs to set the calibration points on the screen.
3. After the "***Calibration Successful.***" message appears, press anywhere on the screen to continue and return to the *Setup* page.

Testing the Panel Calibration

1. Press and hold the on-screen **Calibration** button for 6 seconds to enter the *Calibrate* page.
2. Press anywhere on this page to confirm the on-screen crosshairs match your touch points.
3. If the crosshairs do not appear directly below your LCD touch points, press the **Back** button and recalibrate the panel using the above steps.
4. Exit the *Calibrate* page by pressing the **Back** button to return to the *Protected Setup* page.

NOTE

If the calibration was improperly set and you cannot return to the Calibrate page (through the panel's firmware); *this firmware page can be accessed via G4 WebControl by navigating to the Protected Setup page and pressing the Calibrate button through the VNC window.*
This action causes the panel to go to the Calibrate page seen above, where recalibration of the actual touch panel can be performed again using the above procedures.
A mouse can be plugged into the USB port (on panels that have access to it) and used to navigate back to the Calibration page. The process of pushing the button could also be repeated as necessary.

Cleaning the Touch Overlay and Case

- When cleaning the device, **do not directly spray the device with cleaning fluid**. Instead, spray the cloth and then apply the cloth to the touch screen.
- Do **NOT** use abrasives of any type to clean the device, as abrasives may permanently damage or remove the device's finish.

MST/D-1001 - 10.1" S Series Touch Panels

MST-1001 (Tabletop)

FIG. 6 MST-1001

MST-1001 Specifications

MST-1001 Specifications	
DIMENSIONS (HWD)	6 13/16" x 10 1/16" x 2" (174mm x 255mm x 51mm)
WEIGHT	2.6 lbs (1.179 Kg)
POWER CONSUMPTION	• Full-On: 14 W (max) • Typical: 7.5 W • Standby: 4.5 W • Shutdown: 0.7 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• FCC Part 15 Class B • CE EN 55022 • CE EN 55024 • CE EN 60950-1 • IEC 60950-1 • C-Tick CISPR 22 Class B • IC CISPR 22 Class B • UL 60950-1 • VCCI CISPR 22 Class B • RoHS • WEEE

MST-1001 Specifications (Cont.)	
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD • Display Size (WH): Landscape: 9.1" x 5.9" (230 mm x 149 mm), 10.8" (274 mm) diagonal • Viewable Area (WH): Landscape: 8.5" x 5.4" (217 mm x 136 mm), 10.0" (256 mm) diagonal • Resolution: Landscape: 1280x800 • Aspect Ratio: Landscape: 16:9 • Brightness: 350 cd/m2 • Contrast Ratio: 800:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Resistive
VIEWING ANGLE	85°/85°/85°/85° (Up/Down/Left/Right)
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (1) USB host 2.0, Type A port: Firmware upgrade, touch panel file transfer, JPEG image viewer, HID Peripherals • Bluetooth®: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) and MXA-HST, Bluetooth Handset for Modero X/S Touch Panels (FG5968-17)
VIDEO	• Supported Video Codecs: MPEG2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (decode) MJPEG up to 720p at 25 fps (decode) • Supported Video Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: One decode
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 1.5 Watt, 500 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)
GRAPHICS ENGINE	AMX G4: AMX's exclusive, powerful G4 graphics engine – the driving force behind the advanced graphics and image processing capability on a variety of AMX Touch Panels and other devices (see TPD4 Operations Guide for more information)
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control • Panel-to-Panel Conferencing: Receives audio and video and returns audio for panel-to-panel communication • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled)
CONNECTIONS	• Ethernet: 10/100 port, RJ-45 connector • USB: (1) USB host 2.0, Type A port • Power: PoE (Power over Ethernet), 802.3af, class 3

MST-1001 Specifications (Cont.)	
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 109.2 BTU/hr Standby: 10.6 BTU/hr
INCLUDED ACCESSORIES	• MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • Cat5e Ethernet Cable, Flat Black (ECA2265-10) • UTP CAT.5E Snap In Coupler, Black (64-5968-01)
OPTIONAL ACCESSORIES	• MSA-STMK-10, Secure Table Mount Kit for Modero S Series Touch Panel, 10" (FG2265-16) • MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit Ethernet Switch (FG2178-63) • MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • HPG-10-10K, 3/4" Mini-Grommet, 10-Pack (FG570-01-10K) • MXA-CLK, Modero X/S Series Screen Cleaning Kit (FG5968-16) • MXA-USB-C, USB Port Covers for the Modero X/S Series Touch Panels (FG5968-18)

MSD-1001-L (Wall Mount-Landscape)

FIG. 7 MSD-1001-L

MSD-1001-L Specifications

MSD-1001-L Specifications	
DIMENSIONS (HWD)	6 3/16" x 10 3/8" x 2 5/16" (157 mm x 264 mm x 58 mm)
WEIGHT	• 1.95 lbs (.885 Kg), with Backbox • 1.5 lbs (.680 Kg), without Backbox
POWER CONSUMPTION	• Full-On: 14 W • Typical: 7.5 W • Standby: 4.7 W • Shutdown: 0.8 W • Start-Up Inrush Current: Not applicable due to PoE standard

MSD-1001-L Specifications (Cont.)	
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• FCC Part 15 Class B • CE EN 55022 • CE EN 55024 • CE EN 60950-1 • IEC 60950-1 • C-Tick CISPR 22 Class B • IC CISPR 22 Class B • UL 60950-1 • VCCI CISPR 22 Class B • RoHS • WEEE
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD • Display Size (WH): Landscape: 9.1" x 5.9" (230mm x 149mm), 10.8" (274mm) diagonal • Viewable Area (WH): Landscape: 8.5" x 5.4" (217mm x 136mm), 10.0" (256mm) diagonal • Resolution: Landscape: 1280x800 • Aspect Ratio: Landscape: 16:9 • Brightness: 350 cd/m2 • Contrast Ratio: 800:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Resistive
VIEWING ANGLE	85°/85°/85°/85° (Up/Down/Left/Right)
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • (1) USB host 2.0, Type A port: firmware upgrade, touch panel file transfer, JPEG image viewer, HID peripherals • Bluetooth®: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) and MXA-HST, Bluetooth Handset for Modero X/S Touch Panels (FG5968-17)
VIDEO	• Supported Video Codecs: MPEG2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (decode) MJPEG up to 720p at 25 fps (decode) • Supported Video Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: One decode
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 1.5 Watt, 500 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)

MSD-1001-L Specifications (Cont.)	
GRAPHICS ENGINE	AMX G4: AMX's exclusive, powerful G4 graphics engine – the driving force behind the advanced graphics and image processing capability on a variety of AMX Touch Panels and other devices (see TPD4 Operations Guide for more information)
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control • Video Conferencing: Panel-to-panel and video chat (the MSD-1001 receives video and returns audio) • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	Sleep Button: Sleep button to activate sleep mode and power off. Also provides access to setup pages (can be disabled) Programmable Red/Green LEDs: Programmable red/green LED in the front, left and right sides of the panel, LEDs are beautifully recessed and nearly invisible when not lit
CONNECTIONS	• Ethernet: 10/100 port, RJ-45 connector • USB: (1) USB host 2.0, type A port • Power: PoE (Power over Ethernet), 802.3af, class 0
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 27.3 BTU/hr Standby: 10.9 BTU/hr
INCLUDED ACCESSORIES	• Installation Template 10.1" S Series (68-2265-03)
OPTIONAL ACCESSORIES	• MSA-MMK-10, Multi Mount Kit, 10.1" Modero S Wall Mount (FG2265-11) • MSA-RMK-10, Rack Mount Kit for 10" Modero S Series Wall Mount Touch Panel (FG2265-14) • MSA-AMK-10, Any Mount Kit for 10.1" Modero S Series Wall Mount Touch Panel (FG2265-26) • MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit Ethernet Switch (FG2178-63) • MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • MXA-CLK, Modero X/S Series Screen Cleaning Kit (FG5968-16) • CB-MSA-10, Rough-In Box and Cover Plate for 10.1" Modero S Series Wall Mount Touch Panel (FG2265-08)

Touch Panel Aspect Ratio

While the touch panel screen physical dimensions fall between 16:9 and 16:10, any incoming video stream can be scaled to 16:9 if needed. This may lead to some letter boxing around the video in some cases.

MST/D-701 - 7" S Series Touch Panels

MST-701 (Tabletop)

FIG. 8 MST-701

MST-701 Specifications

MST-701 Specifications	
DIMENSIONS (HWD)	4 1/2" x 7 3/8" x 3 3/16" (115 mm x 188 mm x 81 mm)
WEIGHT	1.4 lbs (.635 Kg)
POWER CONSUMPTION	• Full-On: 13 W • Typical: 7 W • Standby: 4.5 W • Shutdown: 0.7 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• FCC Part 15 Class B • CE EN 55022 • CE EN 55024 • CE EN 60950-1 • IEC 60950-1 • C-Tick CISPR 22 Class B • IC CISPR 22 Class B • UL 60950-1 • VCCI CISPR 22 Class B • RoHS • WEEE

MST-701 Specifications (Cont.)	
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD with Fringe Field Switching (FFS) - Wide viewing angle technology • Display Size (WH): Landscape: 7.3" x 4.8" (186 mm x 122 mm), 8.8" (222 mm) diagonal • Viewable Area (WH): Landscape: 6.05" x 3.54" (154 mm x 90 mm), 7.0" (178 mm) diagonal • Resolution: Landscape: 1024x600 • Aspect Ratio: Landscape: 16:9 • Brightness: 400 cd/m2 • Contrast Ratio: 800:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Resistive
VIEWING ANGLE	89°/89°/89°/89° (Up/Down/Left/Right)
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (1) USB host 2.0, Type A port: Firmware upgrade, touch panel file transfer, JPEG image viewer, HID Peripherals • Bluetooth®: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) and MXA-HST, Bluetooth Handset for Modero X/S Touch Panels (FG5968-17)
VIDEO	• Supported Video Codecs: MPEG2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode only) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (decode) MJPEG up to 720p at 25 fps (decode only) • Supported Video Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: One decode
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 1.5 Watt, 500 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)
GRAPHICS ENGINE	AMX G4: AMX's exclusive, powerful G4 graphics engine – the driving force behind the advanced graphics and image processing capability on a variety of AMX Touch Panels and other devices (see TPD4 Operations Guide for more information)
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control • Panel-to-Panel Conferencing: Receives audio and video and returns audio for panel-to-panel communication • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	Sleep Button: Sleep button to activate sleep mode and power off. Also provides access to setup pages (can be disabled)
CONNECTIONS	• Ethernet: 10/100 port, RJ-45 connector • USB: (1) USB host 2.0, Type A port • Power: PoE (Power over Ethernet), 802.3af, class 3

MST-701 Specifications (Cont.)	
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 27.3 BTU/hr Standby: 10.9 BTU/hr
INCLUDED ACCESSORIES	• MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • Cat5e Ethernet Cable, Flat Black (ECA2265-10) • UTP CAT.5E Snap In Coupler, Black (64-5968-01)
OPTIONAL ACCESSORIES	• MSA-STMK-07, Secure Table Mount Kit for 7" Modero S Tabletop Touch Panel (FG2265-17) • MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit Ethernet Switch (FG2178-63) • MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • HPG-10-10K, 3/4" Mini-Grommet, 10-Pack (FG570-01-10K) • MXA-CLK, Modero X/S Series Screen Cleaning Kit (FG5968-16) • MXA-USB-C, USB Port Covers for the Modero X/S Series Touch Panels (FG5968-18)

MSD-701-L (Landscape Wall Mount)

The MSD-701-L 7" (Landscape) Wall Mount Touch Panel (**FG2265-02**) features brilliant 24-bit color depth, PoE connectivity, and streaming video. The MSD-701-L also supports Bluetooth keyboard and mouse via the optional MXA-BT Bluetooth Adapter.

FIG. 9 MSD-701-L

MSD-701-L Specifications

MSD-701-L Specifications	
DIMENSIONS (HWD)	Landscape: 4 7/8" x 7 3/8" x 2 1/4" (123.9 mm x 187.5 mm x 58 mm), with Backbox
WEIGHT	• 1.05 lbs (.680 Kg), with Backbox • 0.8 lbs (.363 Kg), without Backbox

MSD-701-L Specifications (Cont.)	
POWER CONSUMPTION	• Full-On: 11 W • Typical: 7.5 W • Standby: 4.5 W • Shutdown: 0.7 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• FCC Part 15 Class B • CE EN 55022 • CE EN 55024 • CE EN 60950-1 • IEC 60950-1 • C-Tick CISPR 22 Class B • IC CISPR 22 Class B • UL 60950-1 • VCCI CISPR 22 Class B • RoHS • WEEE
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD with Fringe Field Switching (FFS) - Wide viewing angle technology • Display Size (WH): Landscape: 7.3" x 4.8" (186 mm x 122 mm), 8.8" (222 mm) diagonal • Viewable Area (WH): Landscape: 6.05" x 3.54" (154 mm x 90 mm), 7.0" (178 mm) diagonal • Resolution: Landscape: 1024x600 • Aspect Ratio: Landscape: 16:9 • Brightness: 400 cd/m2 • Contrast Ratio: 800:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Resistive
VIEWING ANGLE	89°/89°/89°/89° (Up/Down/Left/Right)
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (1) USB host 2.0, Type A port: firmware upgrade, touch panel file transfer, JPEG image viewer, HID peripherals • Bluetooth®: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) and MXA-HST, Bluetooth Handset for Modero X/S Touch Panels (FG5968-17)
VIDEO	• Supported Video Codecs: MPEG2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode only) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (decode) MJPEG up to 720p at 25 fps (decode only) • Supported Video Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: One decode

MSD-701-L Specifications (Cont.)	
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 1.5 Watt, 500 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)
GRAPHICS ENGINE	AMX G4: AMX's exclusive, powerful G4 graphics engine – the driving force behind the advanced graphics and image processing capability on a variety of AMX Touch Panels and other devices (see TPD4 Operations Guide for more information)
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control • Panel-to-Panel Conferencing: Receives audio and video and returns audio for panel-to-panel communication • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	• Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled) • Programmable Red/Green LEDs: Programmable red/green LED in the front, left and right sides of the panel, LEDs are beautifully recessed and nearly invisible when not lit
CONNECTIONS	• Ethernet: 10/100 port, RJ-45 connector • USB: (1) USB host 2.0, type A port • Power: PoE (Power over Ethernet), 802.3af, class 0
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 22.2 BTU/hr Standby: 14.3 BTU/hr
INCLUDED ACCESSORIES	• Installation Template 7" S Series (68-2265-02)
OPTIONAL ACCESSORIES	• MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63) • MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • CB-MXSA-07, Rough-In Box and Cover Plate for Modero X/S Series Touch Panel, 7" (FG2265-09) • MSA-MMK-07, Multi Mount Kit for 7" Modero S Series Wall Mount Touch Panel (FG2265-12) • MSA-RMK-07, Rack Mount Kit for Modero S Series Touch Panel, 7" (FG2265-15) • MSA-AMK-07, Any Mount Kit for 7" Modero S Series Wall Mount Touch Panel (FG2265-25) • MXA-CLK, Modero X/S Series Screen Cleaning Kit (FG5968-16) • MXA-USB-C, USB Port Covers for the Modero X/S Series Touch Panels (FG5968-18)

Touch Panel Aspect Ratio

While the touch panel screen physical dimensions fall between 16:9 and 16:10, any incoming video stream can be scaled to 16:9 if needed. This may lead to some letter boxing around the video in some cases.

MST/D-431 - 4.3" S Series Touch Panels

MST-431 (Tabletop)

FIG. 10 MST-431

MST-431 Specifications

MST-431 Specifications	
DIMENSIONS (HWD)	3 1/4" x 5 1/16" x 3 1/8" (82 mm x 128 mm x 79 mm)
WEIGHT	0.9 lbs (.4 Kg)
POWER CONSUMPTION	• Full-On: 4 W • Typical: 3 W • Standby: 2 W • Shutdown: 0.7 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• FCC Part 15 Class B • CE EN 55022 • CE EN 55024 • CE EN 60950-1 • IEC 60950-1 • C-Tick CISPR 22 Class B • IC CISPR 22 Class B • UL 60950-1 • VCCI CISPR 22 Class B • RoHS • WEEE

MST-431 Specifications (Cont.)	
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD • Display Size (WH): Landscape: 5" x 3.4" (128 mm x 87 mm), 6" (152 mm) diagonal • Viewable Area (WH): Landscape: 3.7" x 2.1" (95 mm x 54 mm), 4.3" (109 mm) diagonal • Resolution: Landscape: 480x272 • Aspect Ratio: Landscape: 16:9 • Brightness: 350 cd/m2 • Contrast Ratio: 600:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Resistive
VIEWING ANGLE	40°/80°/65°/65° (Up/Down/Left/Right)
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (1) USB host 2.0, Type A port: Firmware upgrade, touch panel file transfer, JPEG image viewer, HID Peripherals • Bluetooth®: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) and MXA-HST, Bluetooth Handset for Modero X/S Touch Panels (FG5968-17)
VIDEO	Supported Video Codecs: MJPEG up to 720p at 25 fps (decode only)
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 1.5 Watt, 500 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)
GRAPHICS ENGINE	AMX G4: AMX's exclusive, powerful G4 graphics engine – the driving force behind the advanced graphics and image processing capability on a variety of AMX Touch Panels and other devices (see TPD4 Operations Guide for more information)
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control, AMX Resource Management Suite • Video Conferencing: Panel-to-panel and video chat (the MST-431 receives video and returns audio) • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled)
CONNECTIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector • USB: (1) USB host 2.0, Type A port • Power: PoE (Power over Ethernet), 802.3af, class 2
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: • On: 13.6 BTU/hr • Standby: 10.9 BTU/hr

MST-431 Specifications (Cont.)	
INCLUDED ACCESSORIES	• MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • Cat5e Ethernet Cable, Flat Black (ECA2265-10) • UTP CAT.5E Snap In Coupler, Black (64-5968-01)
OPTIONAL ACCESSORIES	• MSA-STMK-43, Secure Table Mount Kit for 4.3" Modero S Tabletop Touch Panel (FG2265-18) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit Ethernet Switch (FG2178-63) • MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • HPG-10-10K, 3/4" Mini-Grommet, 10-Pack (FG570-01-10K) • MXA-CLK, Modero X/S Series Screen Cleaning Kit (FG5968-16) • MXA-USB-C, USB Port Covers for the Modero X/S Series Touch Panels (FG5968-18)

MSD-431-L (Wall Mount - Landscape)

The MST-431-L 4.3" Wall Mount (Landscape) Touch Panel (**FG2265-07**) features advanced technology empowering users to conduct seamless meetings including VoIP, brilliant 24-bit color depth, PoE connectivity, USB and streaming video. The MSD-431-L also supports Bluetooth keyboard and mouse use via the optional MXA-BT Bluetooth Adapter.

FIG. 11 MSD-431-L

MSD-431-L Specifications

MSD-431-L Specifications	
DIMENSIONS (HWD)	Landscape: 3 3/8" x 5 1/16" x 2 5/8" (86 mm x 128 mm x 66 mm)
WEIGHT	• 0.65 lbs (.295 Kg), with Backbox • 0.5 lbs (.225 Kg), without Backbox
POWER CONSUMPTION	• Full-On: 5 W (max) • Typical: 3 W • Standby: 2 W • Shutdown: 0.7 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)

MSD-431-L Specifications (Cont.)	
CERTIFICATIONS	• FCC Part 15 Class B • CE EN 55022 • CE EN 55024 • CE EN 60950-1 • IEC 60950-1 • C-Tick CISPR 22 Class B • IC CISPR 22 Class B • UL 60950-1 • VCCI CISPR 22 Class B • RoHS • WEEE
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD • Display Size (WH): Landscape: 5" x 3.4" (128 mm x 87 mm), 6" (152 mm) diagonal • Viewable Area (WH): Landscape: 3.7" x 2.1" (95 mm x 54 mm), 4.3" (109 mm) diagonal • Resolution: Landscape: 480x272 • Aspect Ratio: Landscape: 16:9 • Brightness: 350 cd/m2 • Contrast Ratio: 600:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Resistive
VIEWING ANGLE	40°/80°/65°/65° (Up/Down/Left/Right)
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (1) USB host 2.0, Type A port: firmware upgrade, touch panel file transfer, JPEG image viewer, HID peripherals • Bluetooth®: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) and MXA-HST, Bluetooth Handset for Modero X/S Touch Panels (FG5968-17)
VIDEO	Supported Video Codecs: MJPEG up to 720p at 25 fps (decode only)
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 1.5 Watt, 500 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)
GRAPHICS ENGINE	AMX G4: AMX's exclusive, powerful G4 graphics engine – the driving force behind the advanced graphics and image processing capability on a variety of AMX Touch Panels and other devices (see TPD4 Operations Guide for more information)
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control, AMX Resource Management Suite • Video Conferencing: Panel-to-panel and video chat (the MSD-431 receives video and returns audio) • Audio Conferencing: Audio (Full Duplex Intercom)

MSD-431-L Specifications (Cont.)	
FRONT PANEL COMPONENTS	• Sleep Button: Sleep button to activate sleep mode and power off. Also provides access to setup pages (can be disabled) • Programmable Red/Green LEDs: Programmable red/green LED in the front, left and right sides of the panel, LEDs are beautifully recessed and nearly invisible when not lit
CONNECTIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector • USB: (1) USB host 2.0, type A port • Power: PoE (Power over Ethernet), 802.3af, class 3
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 13.6 BTU/hr Standby: 10.9 BTU/hr
INCLUDED ACCESSORIES	• Installation Template 4.3" S Series (68-5968-02)
OPTIONAL ACCESSORIES	• MSA-MMK-43, Multi Mount Kit, 4.3" Modero S Wall Mount (FG2265-13) • MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63) • MXA-BT, Bluetooth USB Adapter for Modero X/S Series Touch Panels (FG5968-19) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • CB-MSA-43, Rough-In Box and Cover Plate for the 4.3" Wall Mount Modero S Series Touch Panel (FG2265-10) • MXA-CLK, Modero X/S Series Screen Cleaning Kit (FG5968-16) • MXA-USB-C, USB Port Covers for the Modero X/S Series Touch Panels (FG5968-18)

Touch Panel Aspect Ratio

While the touch panel screen physical dimensions fall between 16:9 and 16:10, any incoming video stream can be scaled to 16:9 if needed. This may lead to some letter boxing around the video in some cases.

Installing Tabletop (MXT) Panels

MST-1001/701/431

- Detailed specifications drawings for the MST-1001 are available to download from www.amx.com.
- Detailed specifications drawings for the MST-701 are available to download from www.amx.com.
- Detailed specifications drawings for the MST-431 are available to download from www.amx.com.

Connector Locations

USB peripherals (mouse, keyboard, etc.) may be connected to the USB port on the rear of the device. Updates to the device's firmware can also made via the USB port.

Note that FIG. 12 shows a MST-1001, but the connector locations are similar for all MST panels:

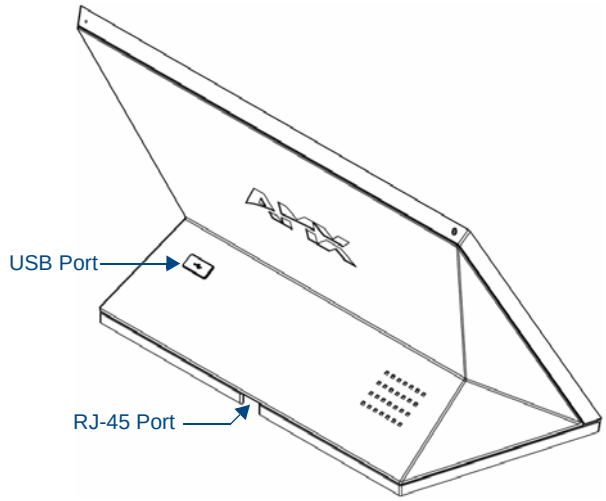


FIG. 12 MST-1001 Connector Location

Power via Power Over Ethernet

Power for the MST-1001 is supplied via Power Over Ethernet (PoE), utilizing an AMX-certified, capacitive touch-compliant PoE injector such as the PS-POE-AT-TC High Power PoE Injector (**FG423-83**) or other approved AMX PoE power source.

The incoming Ethernet cable should be connected to the RJ45 port on the panel.

Installing Wall-Mount (MXD) Panels

A Note About Wall and Rack Installation

Some products are installed in areas of differing temperature and cooling methodologies. These include products installed in walls, racks, cabinets, etc. Those areas may have different temperatures and/or cooling approaches that must be taken into consideration to maintain the product within the specified operating temperature.

FIG. 13 shows an AMX device installed in a wall with a filled volume (such as with insulation or concrete), as well as with a closed volume (such as between studs in an otherwise finished wall). The diagram shows how heat generated by the device or other devices may have no way to escape, and may build up to levels that may affect device operation.

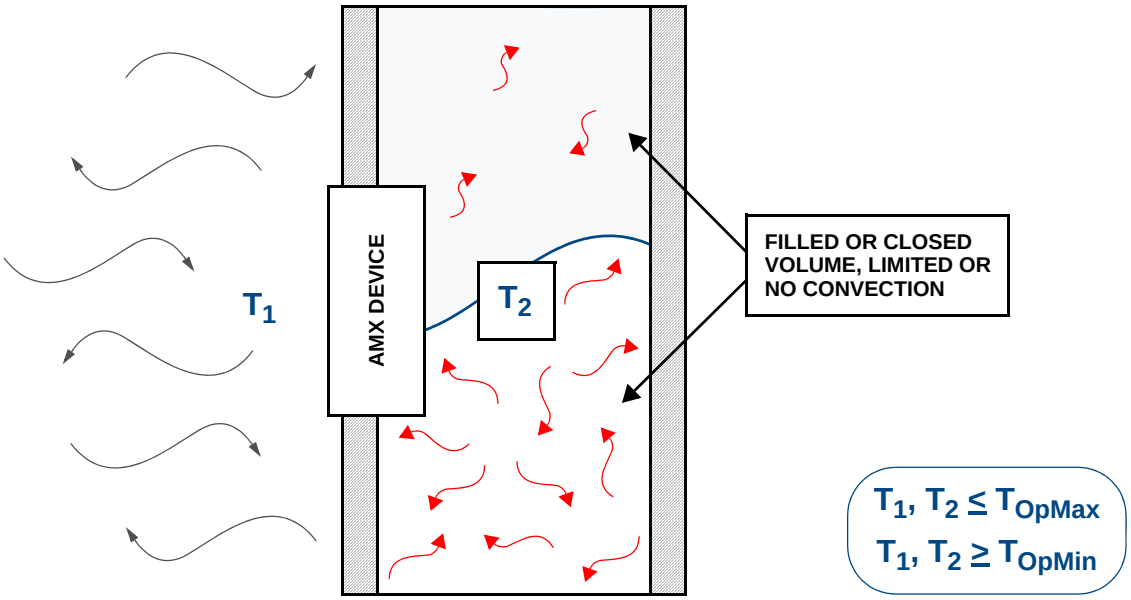


FIG. 13 Heat convection in filled or closed volume, limited or no convection

In FIG. 14, the diagram displays an AMX device in a typical rack mounting, with full air circulation around the front and back of the device. In this case, the main concern is with heat building up between components, possibly to levels that may affect device operation.

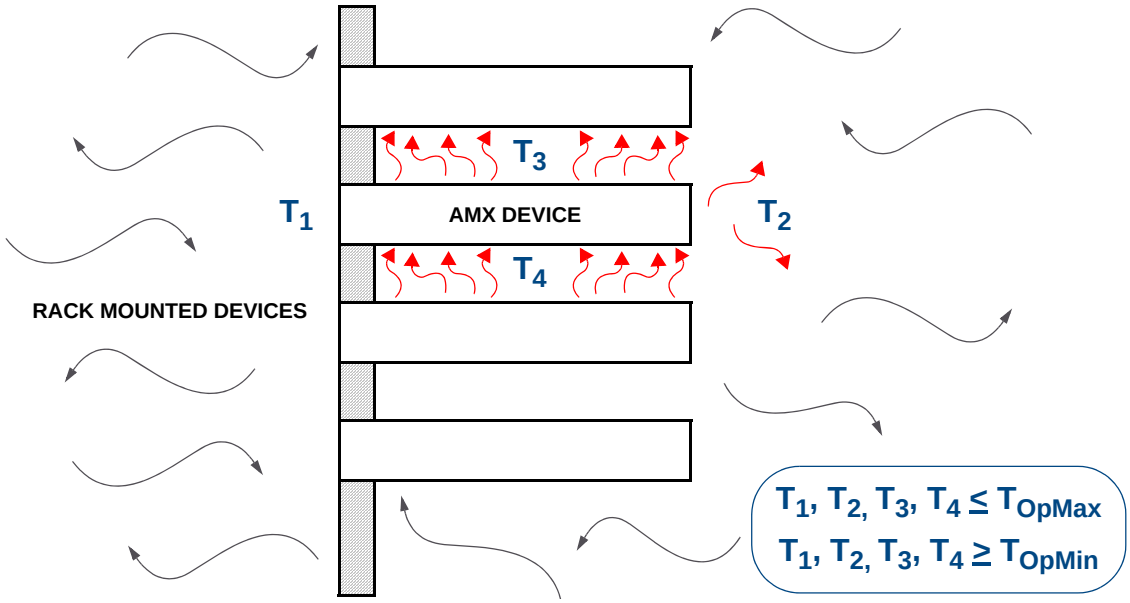


FIG. 14 Heat convection in rack-mounted devices

Installation Recommendations

During any installation, a lack of ventilation may produce conditions that may adversely affect the device's operation. In these circumstances, special care must be made to make sure that temperatures within enclosed areas do not exceed the device's maximum rated temperature.

While the outside temperature of the device may be at or below its maximum operating temperature, special care must be taken before and during installation to ensure that the maximum operating temperature is not exceeded within wall or rack installation spaces.

MSD-1001/701/431-L

- Detailed specifications drawings for the MSD-1001-L are available to download from www.amx.com.
- Detailed specifications drawings for the MSD-701-L are available to download from www.amx.com.
- Detailed specifications drawings for the MSD-431-L are available to download from www.amx.com.

Removing the Backbox

S Series touch panels are shipped pre-installed in a plastic Backbox. This Backbox must be detached from the panel before installation.

NOTE

Also, after installation there are circumstances (such as firmware updates or other maintenance) that will require accessing the device's Micro-USB ports. In these cases, the panel may need to be removed from the Backbox.

Wall-mount S Series touch panels are held in place to the Backbox via latch hooks and clips on the Backbox (FIG. 21). The clips that lock down the panel's edges must be unlatched in order to remove the touch panel from the Backbox.

CAUTION

Read the following instructions and be careful when removing the touch panel from it's Backbox. Improper handling or excessive force can result in damage to the panel's glass touch surface.

Detaching the MSD-1001-L Backbox

1. Orient the panel so that the panel/Backbox assembly is upside-down, and the glass is facing away from you. The bottom of the Backbox should be facing up.
2. On the bottom of the Backbox, press down on the front corners of the plastic (on the side nearest to the glass) to flex it enough to unhinge the panel.

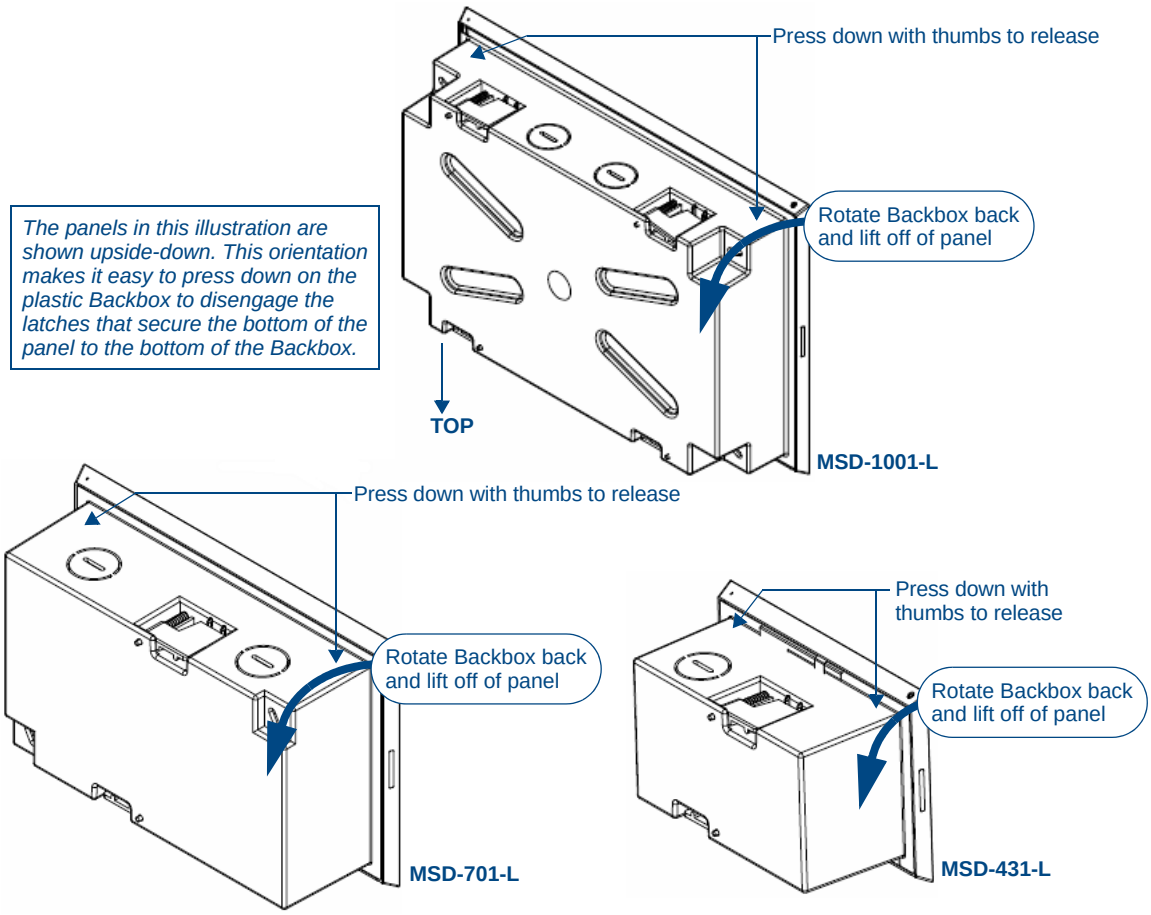

The panels in this illustration are shown upside-down. This orientation makes it easy to press down on the plastic Backbox to disengage the latches that secure the bottom of the panel to the bottom of the Backbox.
Press down with thumbs to release
Rotate Backbox back and lift off of panel
TOP
MSD-1001-L
Press down with thumbs to release
Rotate Backbox back and lift off of panel
MSD-701-L
Press down with thumbs to release
Rotate Backbox back and lift off of panel
MSD-431-L

FIG. 15 S Series Backboxes

Note that at this point, the top edge of the panel is still latched into the top of the Backbox.

3. Rotate the top of the Backbox away from the top of the panel and carefully lift it away. Be careful not to pull on the cables or connectors.

Installation

NOTE

*Refer to **A Note About Wall and Rack Installation*** **on page 27** *for important notes on thermal concerns with Wall and Rack Installations.*

S Series touch panels may be installed directly into a solid surface environment, using either solid surface screws or the included locking tabs for different mounting options. Once installed, the panel is contained within a clear outer housing known as the Backbox (FIG. 16).

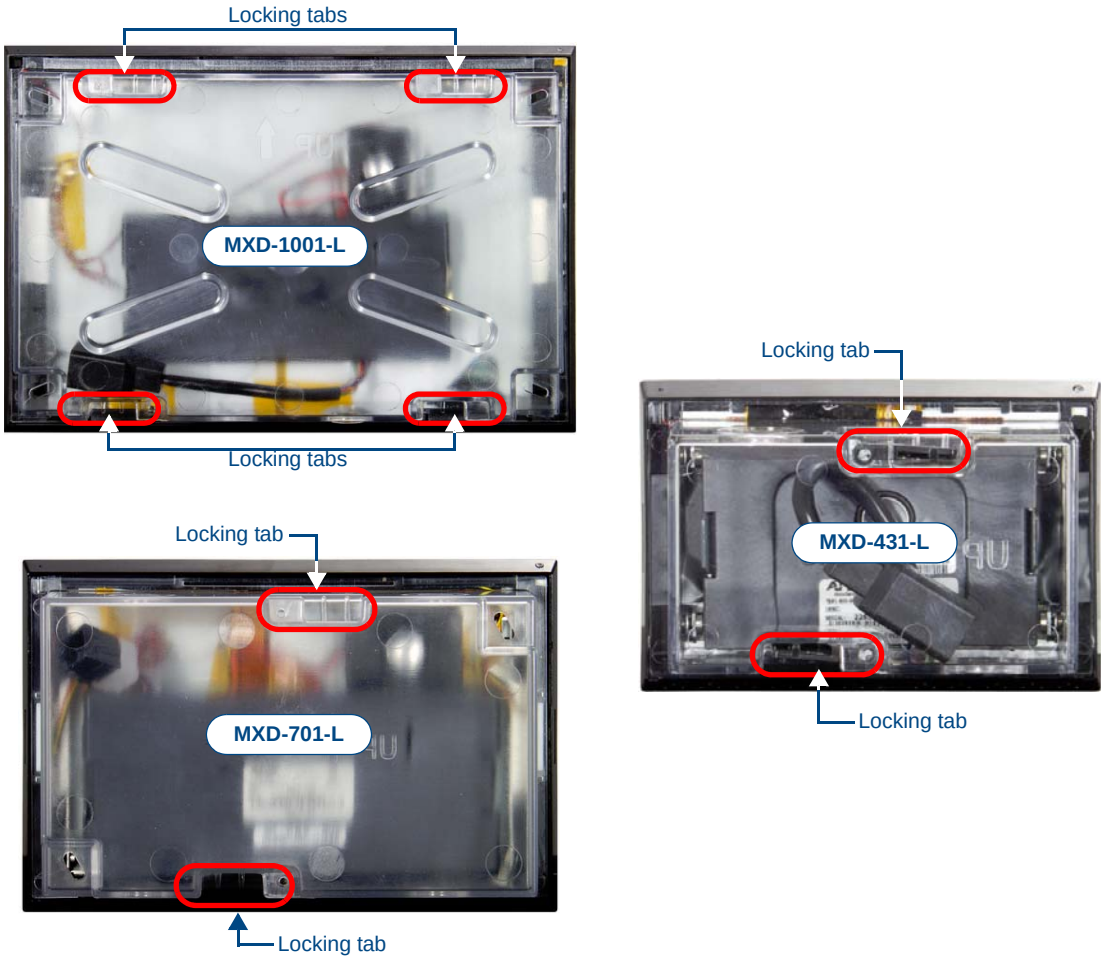


FIG. 16 S Series Backboxes - Locking Tabs

This Backbox is removed to install the device into a wall or when using the optional Rough-In Box accessory. Refer to *Removing the Backbox* on page 29 for Backbox removal.

NOTE

For typical mounting surfaces, such as drywall, use the locking tabs as the primary method for securing the Backbox to the surface. For thin walls or solid surfaces, use mounting screws (not included).

Installing the S Series Panel into a Wall

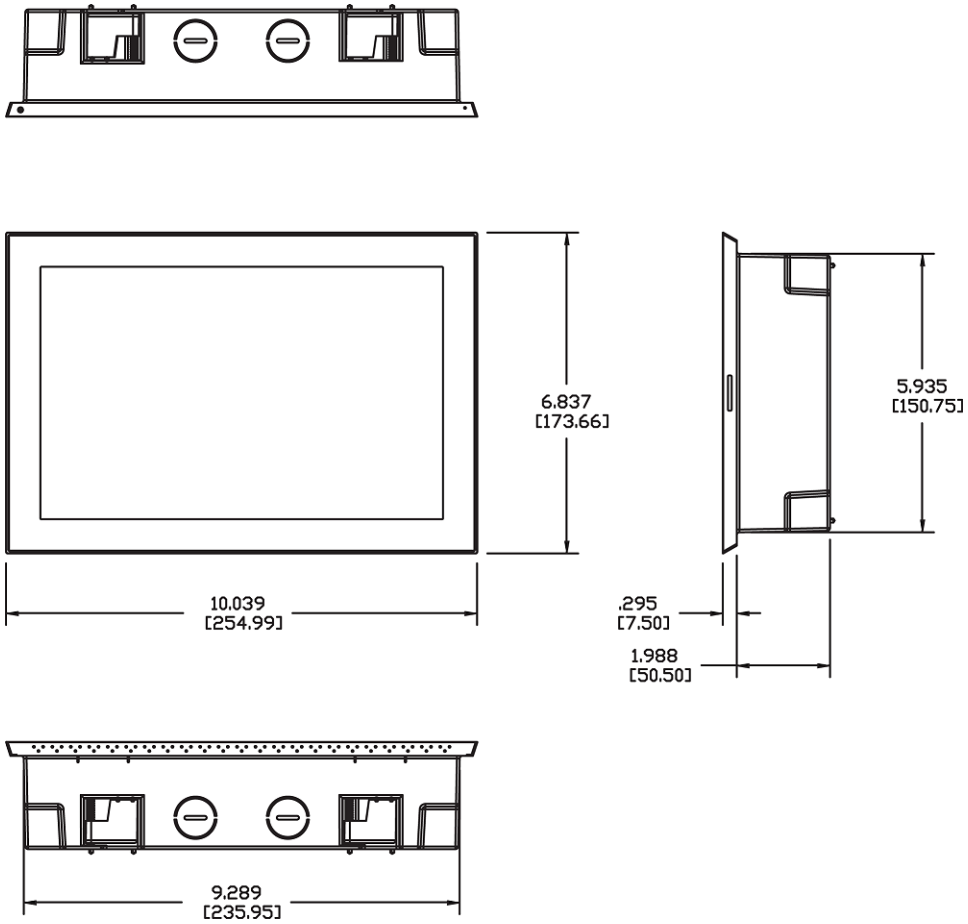
S Series touch panels come with a clear plastic Backbox designed to attach the panel to most standard wall materials. This Backbox has locking tabs to help lock the Backbox to the wall (see FIG. 16).

These locking tabs are only extended AFTER the Backbox is inserted into the wall.

WARNING

When installing the Backbox, make sure that the assembly is in the correct position and in the correct place. Once the locking tabs are extended and locked into place, removing the Backbox may be difficult without having access to the back of the wall or causing damage to the wall.

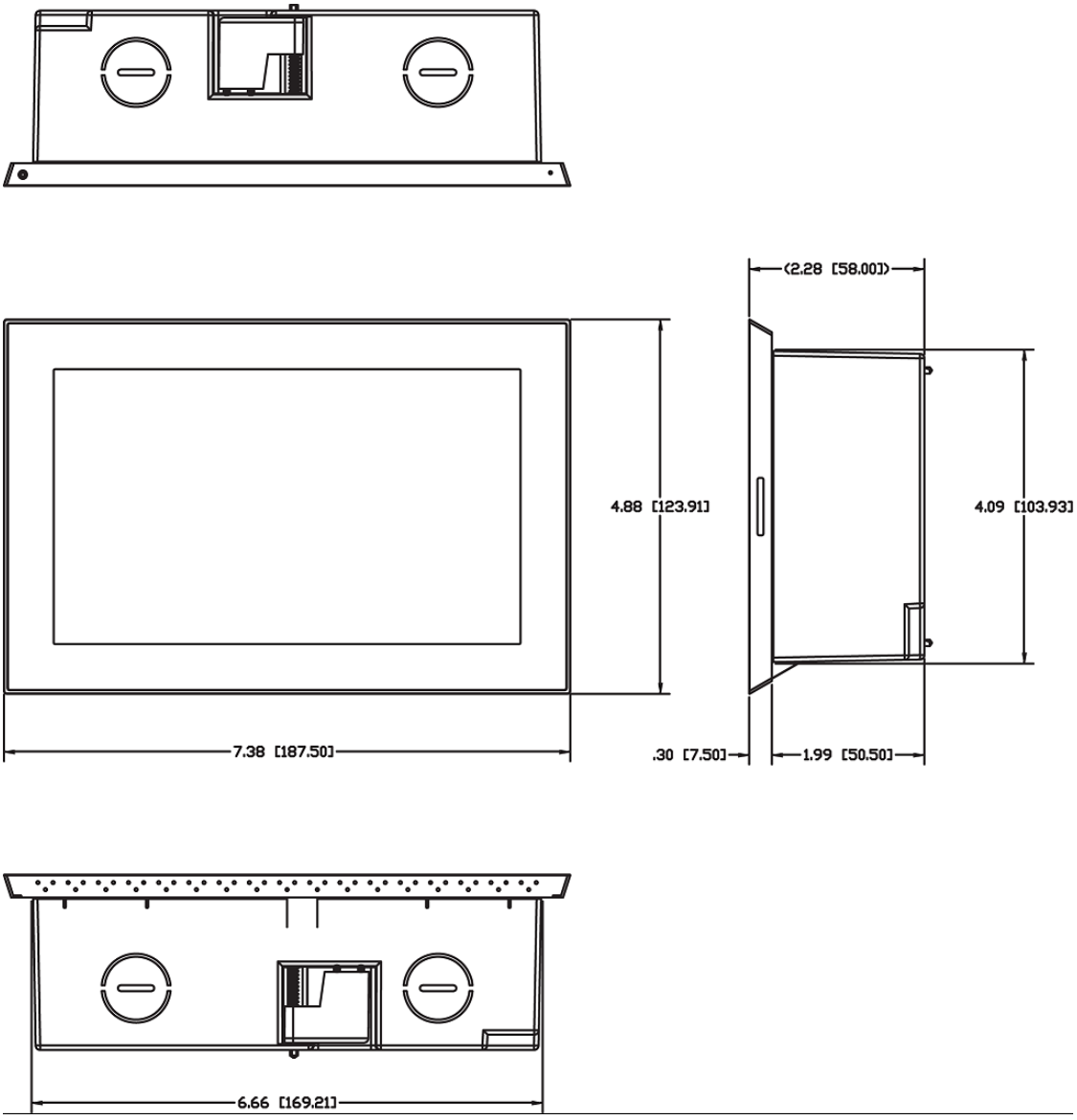
MXD-1001-L Dimensions



Notes:
Dimensions in parenthesis are in millimeters
Additional detailed installation and product drawings are available to view/download at www.amx.com

FIG. 17 MST-1001-L

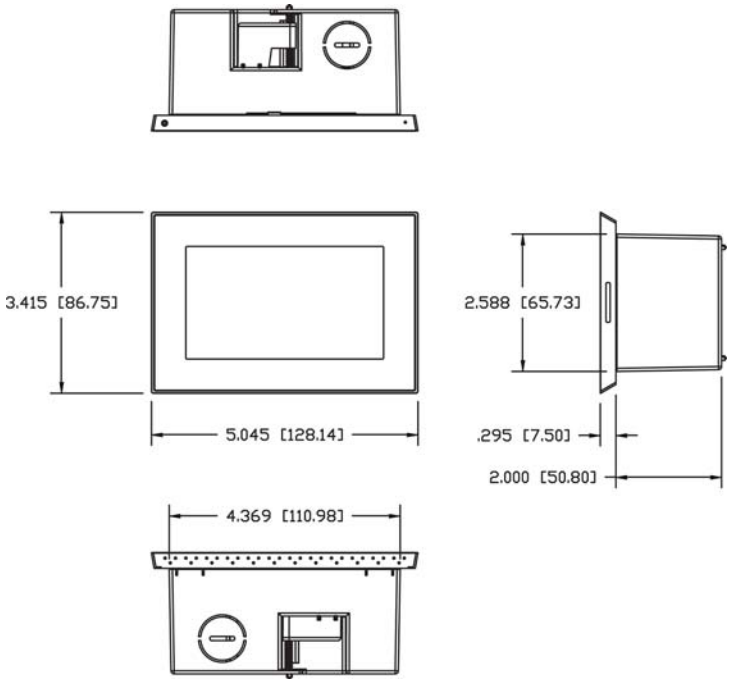
MXD-701-L Dimensions



Notes:
Dimensions in parenthesis are in millimeters
Additional detailed installation and product drawings are available to view/download at www.amx.com

FIG. 18 MSD-701-L

MXD-431-L Dimensions



Notes:
Dimensions in parenthesis are in millimeters
Additional detailed installation and product drawings are available to view/download at www.amx.com

FIG. 19 MSD-431-L

NOTE

In order to ensure a stable installation of the MSD-1001-L, the thickness of the wall material must be a minimum of .50 inches (1.27cm) and a maximum of .875 inches (2.22cm). The mounting surface should also be smooth and flat.

Installing the Backbox

1. Prepare the area by removing any screws or nails from the drywall before beginning the cutout process.
2. For best results, use the Installation Template provided with the panel to ensure proper placement (FIG. 20):
   - **MXD-1001-L** - Template, Backbox, 10.1" Touch Panel, Modero S Series (**68-2265-03**)
   - **MXD-701-L** - Template, Backbox, 7.0" Touch Panel, Modero S Series (**68-2265-02**)
   - **MXD-431-L** - Template, Backbox, 4.3" Touch Panel, Modero S Series (**68-2265-01**)

   The templates are marked to ensure that the touch panel and Backbox are properly aligned.

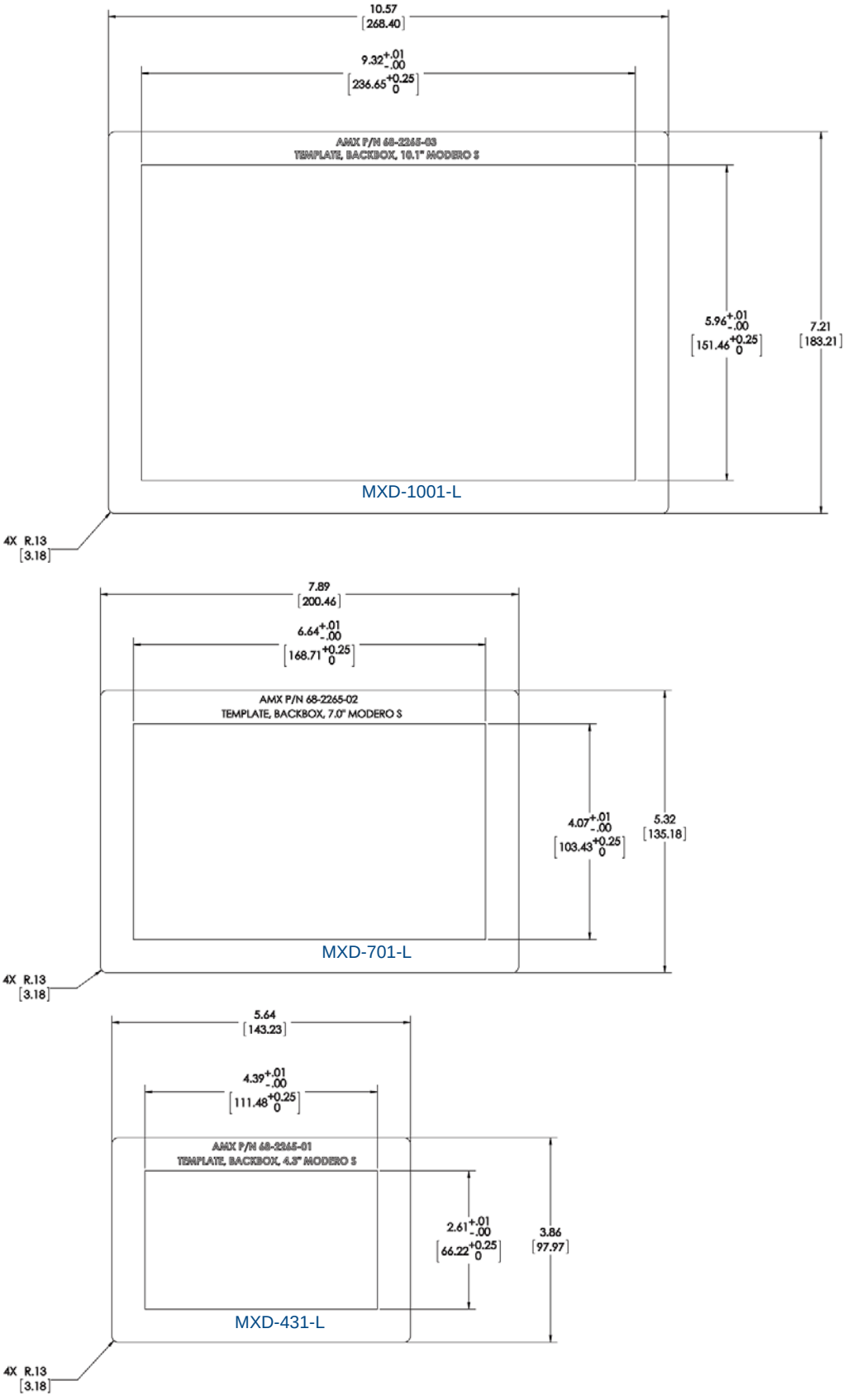


FIG. 20 S Series Installation Templates

WARNING

Using the included template to select the final placement of the Backbox is highly recommended. The outside edges of the template are the same dimensions as the touch panel, which allows you to troubleshoot possible conflicts with wall edges, doors, and other potential obstacles.

3. After ensuring proper placement, cut out the mounting surface for the Backbox, using the MSD-1001-L Installation Template as a guide.

CAUTION

Making sure the actual cutout opening is slightly smaller than the provided dimensions is highly recommended. This provides a margin for error if the opening needs to be expanded. Too little wall material removed is always better than too much.

4. Thread the incoming Ethernet and Micro-USB wiring (if Micro-USB access is desired) from their terminal locations through the surface opening (FIG. 21).

   Leave enough slack in the wiring to accommodate any re-positioning of the panel.

5. Remove the Backbox knockouts and thread the incoming wiring through the knockout holes (FIG. 21). Note that while FIG. 21 shows the MXD-1001-L, the illustration applies to all S Series panels. The only difference is the dimensions and the number of knockouts and locking tabs.

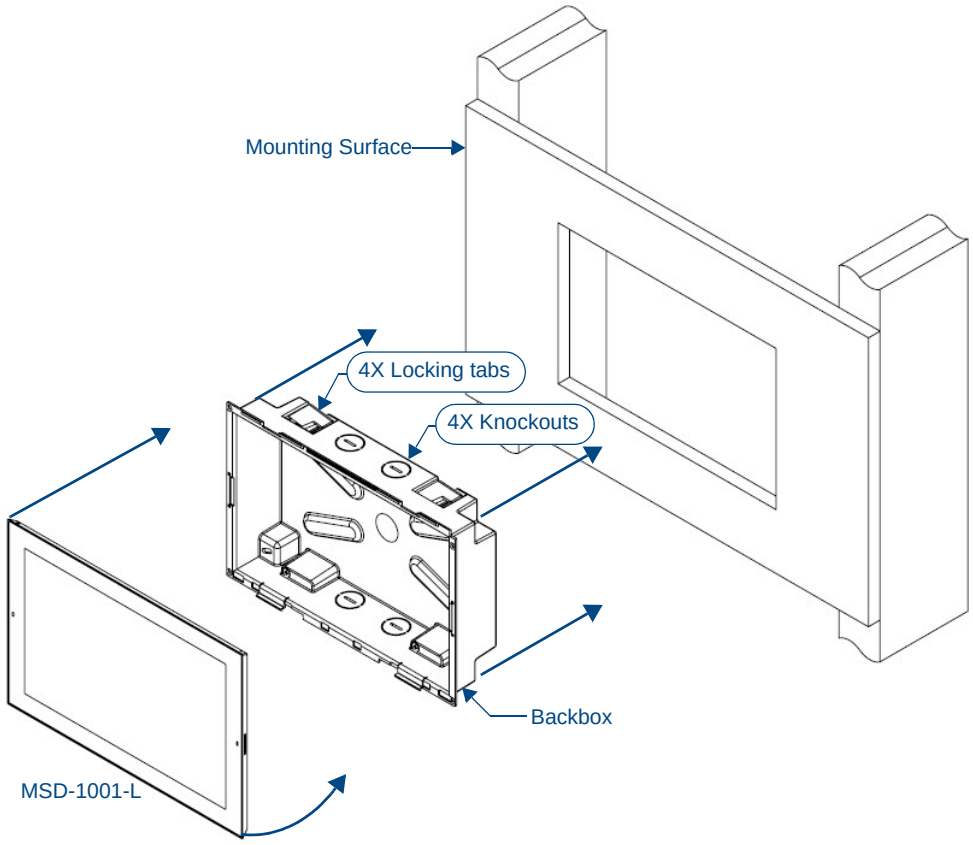


FIG. 21 MSD-1001-L Backbox Installation

6. Thread the incoming Ethernet and Micro-USB wiring (if USB or Micro-USB access is desired) from the surface opening and through the knockouts.
7. Push the Backbox into the mounting surface.

   Ensure that the locking tabs lie flush against the Backbox and that the Backbox goes freely into the opening.
8. Extend the locking tabs on the sides of the Backbox by tightening the screws inside the box until snug.

WARNING

The maximum recommended torque to screw in the locking tabs on the plastic Backbox is 5 IN-LB [56 N-CM]. Applying excessive torque while tightening the tab screws, such as with powered screwdrivers, can strip out the locking tabs or damage the Backbox.

- Not all of the tabs must be extended to lock the Backbox in place, but extending a minimum of the top and bottom tabs is highly recommended.
- Apply enough pressure to the screw head to keep the box flush with the wall: this ensures that the locking tabs will tighten up against the inside of the wall.
- The Backbox is clear to allow visual confirmation that the tabs have been extended and are gripping the wall, as well as in assisting with removal if necessary.
- *MSD-1001-L and MSD-701-L only:* For additional strength, #4 mounting screws (not included) may be secured through circular holes located at the left and right sides of the panel. In order to prevent damage to the touch panel, make sure that these are flush with the Backbox.

9. Insert each connector into its corresponding location along the back of the device:

- FIG. 22 shows the connectors on the rear of the MSD-1001-L: .

FIG. 22 Rear of the MSD-1001-L

- FIG. 23 shows the connectors on the rear of the MSD-701-L:

FIG. 23 Rear of the MSD-701-L

- FIG. 24 shows the connectors on the rear of the MSD-431-L:

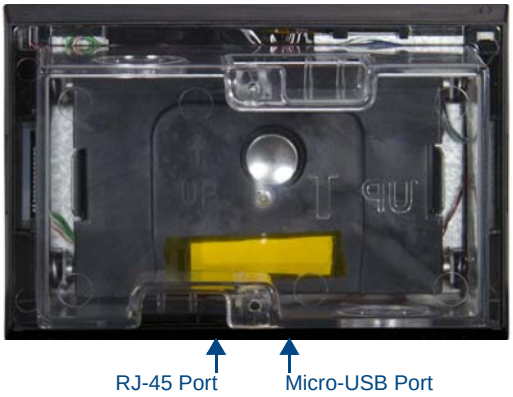


FIG. 24 Rear of the MSD-431-L

10. Test the incoming wiring by attaching the panel connections to their terminal locations and applying power.

NOTE

Do not disconnect the connectors from the touch panel. The unit must be installed with the attached connectors before being inserted into the mounting surface.

- Verify that the panel is receiving power and functioning properly to prevent repetition of the installation.
- Remove power before continuing with the installation.

11. Latch the panel onto the top hooks on the Backbox and push it down onto the bottom snaps. Press gently but firmly on the ends until the snaps "click" to lock it down (FIG. 25):

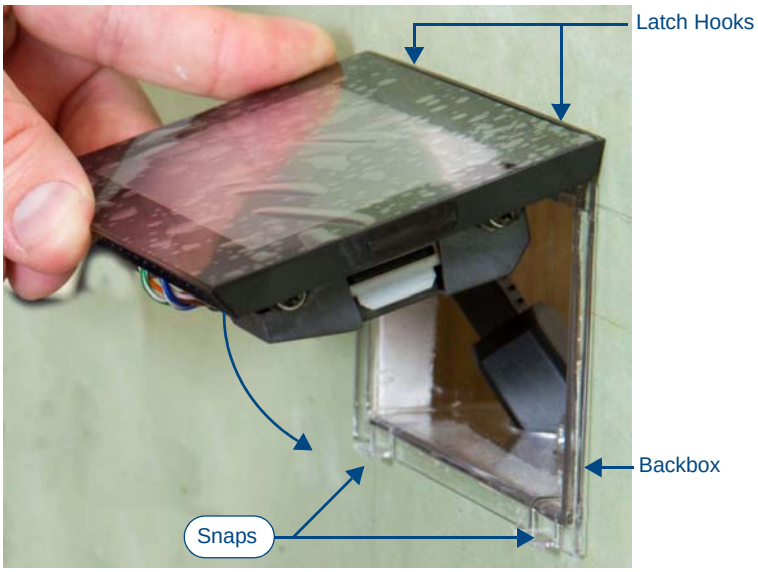


FIG. 25 Installing the MSD-431-L

WARNING

If a gap is observed between the panel and the Backbox, or feel any binding while locking down the panel, stop immediately and verify that no cables or other items are in the way. Do not force the panel into position, as this can cause damage to the touch screen or the panel electronics.

12. Reconnect the terminal Ethernet and USB to their respective locations on either the Ethernet port or NetLinx Master.

Removing The Touch Panel From the Backbox After Wall Installation

Occasionally it may be necessary to remove the touch panel from the wall to perform routine maintenance, firmware upgrade or troubleshooting. This section describes the best methods for removing to touch panel from the Backbox without damaging either.

1. With fingertips placed on the top edge of the bezel, press down on the panel firmly but gently to unhinge the top clips of the Backbox. ***Do not press on the glass!***

Always push down on the frame of the touch panel. NEVER push on the glass.

2. Once the top clips are release from the touch panel, pull the top panel away from the wall and lift the touch panel up to separate it from the Backbox. Do not pull on the cables.
3. Unplug the cables if the touch panel needs to be removed for maintenance.
4. To reattach the panel to its Backbox, latch the panel onto the top hooks on the Backbox and push it down onto the bottom snaps. Press gently but firmly on the ends until the snaps “click” to lock it down.

Upgrading Firmware

Overview

Programming the S Series touch panels require the use of NetLinx Studio and TPDesign4, both available from www.amx.com.

Downloading Firmware Updates From www.amx.com

Before attempting to upgrade the firmware, you must have the appropriate Kit file for your touch panel:

NOTE

All S Series touch panels share the same firmware.

1. Open the product page for the panel, at www.amx.com (Trade Site).
2. Scroll down to locate *Firmware Files* on the right side of the page, and click the firmware file link provided. An example is shown in FIG. 26:

Example of a firmware download link on an S-Series panel page (www.amx.com)
Firmware Files
AMX-PI2 Product Information
Modero S Series Touch Panels Firmware
ZIP | 48.53 MB | v 2.106.08
Firmware version

FIG. 26 www.amx.xom - S Series Touch Panel Product Page - Firmware File link

Note that for S Series touch panels, the firmware .KIT file is bundled in a ZIP file that typically also includes a *Readme.TXT* file (which provides details on this version of firmware), and a *Programming Instructions.TXT* file (which provides basic instructions for upgrading firmware on the panel):

Name	Size	Packed	Type
..			File folder
SW2265_ModeroS_v2_106_08.kit	52,735,024	49,693,539	KIT File
FG2265-Readme.txt	4,168	1,916	Text Document
SW2265-KIT Programming Instructions.txt	3,825	1,534	Text Document

FIG. 27 Example of firmware ZIP file contents

3. Extract the contents of the ZIP file to a known location.

Upgrading Firmware via USB Flash Drive

Firmware and TPDesign4 files may be transferred to the panel made via USB flash drive.

Load the Firmware on a USB Flash Drive

1. Insert the USB flash drive in an available USB port on your PC.
   - The flash drive must be in either FAT32 or FAT16 format.
   - 32GB is the maximum acceptable size for flash drives used with touch panels
   - For wall-mounted panels (MSD-xxx), accessing the USB ports may require removing the panel from the wall mount (if a USB extension was not already installed).

2. Create a directory on the USB flash drive with one of the following names, depending on the panel you are upgrading:

   "*MST-1001*" or "*MSD-1001*"

   "*MST-701*" or "*MSD-701*"

   "*MST-431*" or "*MSD-431*"

   - Note that the name must match exactly (do not include the quotes)
   - These directory names are *not* case-sensitive:

3. Copy the firmware (.kit) file to be transferred (for example, "*SW5968_ModeroS_v2_106_08.kit*") into this directory on the flash drive.

NOTE

Make sure this is the only .kit file in this directory - if not, the latest version will be used.

4. Eject or unmount the flash drive from the PC.

Transfer the Firmware File From the Flash Drive to the Touch Panel

1. Connect the USB Flash Drive to one of the USB Type A ports on the panel.

NOTE

The Micro USB port cannot be used for firmware upgrades.

2. Go to the **Install Firmware** setup page (*Configuration->Admin->Install Firmware*):
   a. Press and hold the *Sleep* button for 3 seconds to open the *Settings* page.

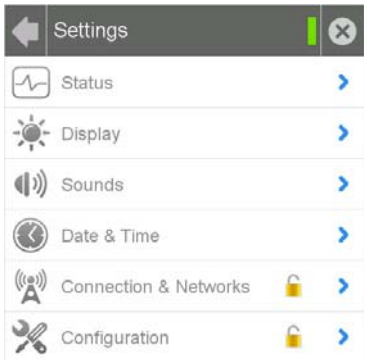


FIG. 28 Settings page

   b. From the *Settings* page, select the *Configuration* page. This may require entering a password.
   c. From the *Configuration* page, select *Admin*.
   d. From the *Admin Configuration* page, select *Install Firmware*.

3. In the *Firmware Installation* page, select **New** to install new firmware from external disk.
4. The popup page displays the name of the firmware file (for example, "*SW5968_ModeroS_v2_106_08.kit*").
5. Select **Yes**, and follow the directions displayed on the popup.
6. Once the panel reboots, it will perform the firmware upgrade.

After the upgrade, the device contains the newly loaded version of firmware.

Upgrading from Previous Firmware

S Series panels provide the option to revert the device to the previous firmware run before an upgrade. To upgrade the device from previously loaded firmware:

1. From the *Settings* page, select the *Configuration* page.
2. From the *Configuration* page, select *Admin*.
3. From the *Admin Configuration* page, select *Install Firmware*.
4. In the *Firmware Installation* page, select *Previous*.
5. The *Confirmation Dialog* box (FIG. 29) will ask "Are you sure you want to install the following firmware?" The option to choose **Yes** will be enabled after five seconds. Press **Yes** to load the firmware listed, and **No** to return to the *Firmware Installation* popup window.

FIG. 29 Previous Firmware installation confirmation dialog

6. If you choose **Yes**, the device will retrieve the files and then reboot.

Returning to Factory Default Firmware

S Series panels allow the option to return the device to its original factory default firmware, which may be necessary in certain situations. To return the device to its factory default firmware:

1. From the *Settings* page, select the *Configuration* page.
2. From the *Configuration* page, select *Admin*.
3. From the *Admin Configuration* page, select *Install Firmware*.
4. In the *Firmware Installation* page, select *Factory.*
5. The *Confirmation Dialog* box (FIG. 30) will ask "Are you sure you want to install the following firmware?" The option to choose **Yes** will be enabled after five seconds. Press **Yes** to load the firmware listed, and **No** to return to the *Firmware Installation* popup window.

FIG. 30 Previous Firmware installation confirmation dialog

If you choose **Yes**, the device will retrieve the files and then reboot.

Upgrading Firmware via NetLinx Studio

Firmware updates to S Series panels can be done via the NetLinx Studio software application. This requires that the touch panel is connected to a NetLinx Master, and that the Master is on the same network as (or accessible by) the PC running NetLinx Studio. This is because the firmware file is loaded to the panel through it's connection to the Master.

S Series panels use Kit files for firmware upgrades. A Kit file (*.kit) is a package of several files, all of which are required to upgrade the firmware, and are available online via www.amx.com (refer to the device page for firmware updates).

Transferring the KIT File via NetLinx Studio

1. In Netlinx Studio, right-click in the *Online Tree* tab of the Workspace window and select **Refresh System Online Tree** to refresh the device listing. The touch panel should be indicated in the device list.
2. Right-click on the target panel and select **Firmware Transfer** to open the *Send to NetLinx Device* dialog. Alternatively, select **Tools > Firmware Transfers > Send To NetLinx Device** to open this dialog (FIG. 31):

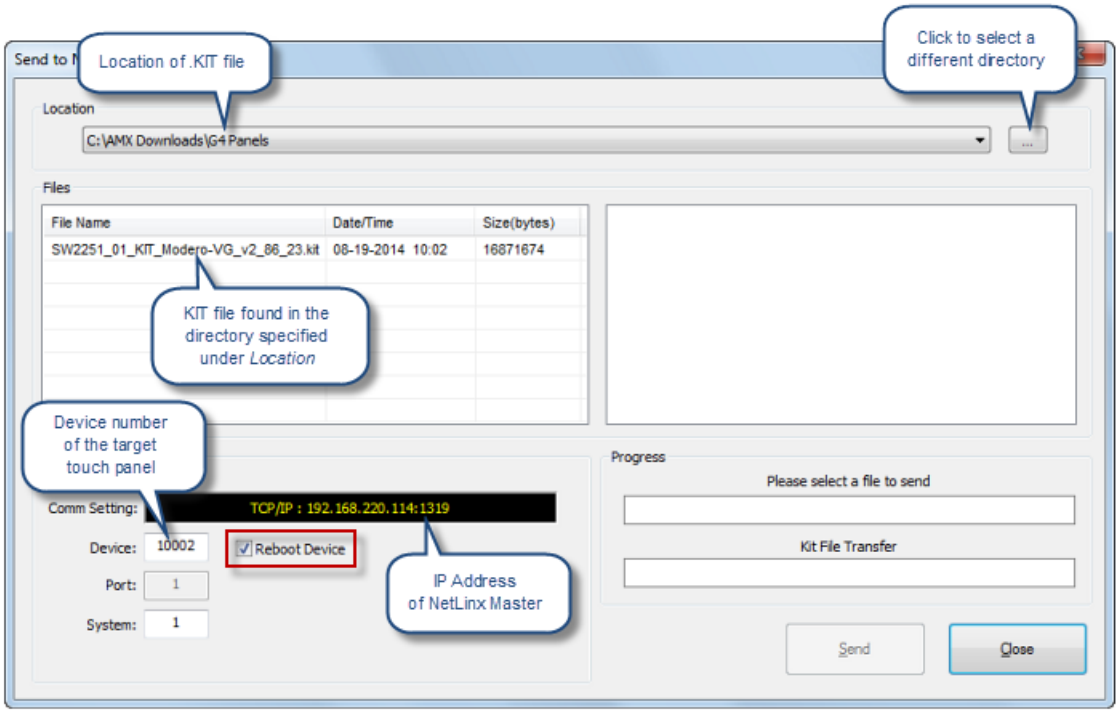


FIG. 31 NetLinx Studio - Send to NetLinx Device dialog

   a. Under **Location**, select the directory to which the firmware ZIP file was extracted. Use the *Browse* (**...**) button to locate and select a different directory if necessary.
   b. All KIT files detected in the selected directory are listed in the **Files** window. Select a KIT file to transfer.
      - Note that when a file is selected, file details may be displayed in the text field to the right of the *Files* window. Review this text before proceeding to see any important notes or instructions that are specific to this file.
      - Also note that the *Send* button is only enabled once a file has been selected in the *Files* window.
   c. Under *Target*, enter the Device number for the target touch panel in the **Device** field.
      - Use the Online Tree to determine the device's assigned ID (as well as the current firmware version).
      - Note that if this dialog was accessed by right-clicking on the touch panel in the Online Tree, the Device Number should already be set correctly.
   d. Verify that the **Reboot Device** option is selected. It is necessary to reboot the panel after a firmware upgrade.
3. Click **Send** to begin the file transfer.
4. The progress of the transfer operation is indicated in the *Progress* bars in this dialog, as well as on the panel itself.
5. When the transfer is finished, and the reboot is complete, press the **Close** button.

NOTE

If for any reason your Kit file transfer should fail, continue to retry the transfer until you are successful. DO NOT reboot the Master, or change connections until the transfer is complete. Failure to complete this operation successfully may result in a factory repair of the Master.

Troubleshooting

Overview

This section describes the solutions to possible hardware/firmware issues that could arise during the common operation of a Modero S touch panel.

Panel Doesn't Respond to Touches

Symptom: The device either does not respond to touches on the touch screen or does not register the touch as being in the correct area of the screen.

If the screen is off:

- *The device may be in Display Sleep Mode.* Press and hold the **Sleep** button to wake up the panel.
- *The device may not be connected to power.* Verify that the power source is connected to the device and receiving power.

Panel Isn't Appearing in the Online Tree Tab

1. Verify that the System number is the same on both the NetLinx Project Navigator window and the System Settings page on the device.
2. Verify the proper NetLinx Master IP and connection methods entered into the Master Connection section of the *System Settings* page.

Can't Connect to a NetLinx Master

Symptom: I can't seem to connect to a NetLinx Master using NetLinx Studio.

Select *Settings > Master Comm Settings > Communication Settings > Settings (for TCP/IP)*, and uncheck the "Automatically Ping the Master Controller to ensure availability".

The pinging is to determine if the Master is available and to reply with a connection failure instantly if it is not. Without using the ping feature, a connection may still be attempted, but a failure will take longer to be recognized.

If you are trying to connect to a Master controller that is behind a firewall, you may have to uncheck this option. Most firewalls will not allow ping requests to pass through for security reasons.

When connecting to a NetLinx Master controller via TCP/IP, the program will first try to ping the controller before attempting a connection. Pinging a device is relatively fast and will determine if the device is off-line, or if the TCP/IP address that was entered was incorrect.

If you decide not to ping for availability and the controller is off-line, or you have an incorrect TCP/IP address, the program will try for 30-45 seconds to establish a connection.

Only One Modero S Series Panel Indicated in My System

Symptom: I have more than one Modero S Series panel connected to my System Master and only one is indicated.

Multiple NetLinx Compatible devices can be associated for use with a single Master. If the user does not assign a device number, one will be assigned automatically to the panel. When using multiple panels, different Device Number values have to be assigned to each panel.

1. Press and hold the **Sleep** button to open the *Settings* page.
2. Press the **Protected b**utton, enter **1988** into the on-screen Keypad's password field, and press **Done** when finished.
3. Enter a Device Number value for the panel into the Device Number Keypad. The range is from 1 - 32000.

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